```
=> fil reg; d que l8
FILE 'REGISTRY' ENTERED AT 09:29:15 ON 01 MAR 2002
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STRUCTURE FILE UPDATES:   27 FEB 2002  HIGHEST RN 396639-34-2
DICTIONARY FILE UPDATES:  27 FEB 2002  HIGHEST RN 396639-34-2

TSCA INFORMATION NOW CURRENT THROUGH July 7, 2001

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

Crossover limits have been increased.  See HELP CROSSOVER for details.

Calculated physical property data is now available.  See HELP PROPERTIES
for more information.  See STNote 27, Searching Properties in the CAS
Registry File, for complete details:
http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf

The P indicator for Preparations was not generated for all of the
CAS Registry Numbers that were added to the H/Z/CA/CAplus files between
12/27/01 and 1/23/02.  Use of the P indicator in online and SDI searches
during this period, either directly appended to a CAS Registry Number
or by qualifying an L-number with /P, may have yielded incomplete results.
As of 1/23/02, the situation has been resolved.  Also, note that searches
conducted using the PREP role indicator were not affected.

Customers running searches and/or SDIs in the H/Z/CA/CAplus files
incorporating CAS Registry Numbers with the P indicator between 12/27/01
and 1/23/02, are encouraged to re-run these strategies.  Contact the
CAS Help Desk at 1-800-848-6533 in North America or 1-614-447-3698,
worldwide, or send an e-mail to help@cas.org for further assistance or to
receive a credit for any duplicate searches.

L4          237 SEA FILE=REGISTRY ABB=ON  TCTCAGGGGACCACATCGGTG|CACCGATGTGGTCCC
                CTGAGA|CGGTATCCTATTCCCGGGAGT|ACTCCCGGGAATAGGATACCG|GGGCGTTATGCC
                GTA|TACGGCATAACGCCC|TGCAGAGTGGTATAA|TTATACCACTCTGCA/SQSN
L5          138 SEA FILE=REGISTRY ABB=ON  TGCAGAGTGGTATAACTG|CAGTTATACCACTCTGCA
                |GCCGGGTTCGTTAATACGGCA|TGCCGTATTAACGAACCCGGC|CTGTGCCTGTTACTGGGT
                TTT|AAAACCCAGTAACAGGCACAG|GAACGTTCCAGCGCTGCGACA|TGTCGCAGCGCTGGA
                ACGTTC|TTAACCACACCCCACCGGGCA|TGCCCGGTGGGGTGTGGTTAA/SQSN
L6          261 SEA FILE=REGISTRY ABB=ON  L4 OR L5
L8           31 SEA FILE=REGISTRY ABB=ON  L6 AND SQL<51

=> d rn cn nte kwic l8 1-31; fil capl; s l8

L8   ANSWER 1 OF 31  REGISTRY  COPYRIGHT 2002 ACS
RN   382495-75-2  REGISTRY
CN   GenBank E66922 (9CI)  (CA INDEX NAME)
SQL  15

SEQ      1 tgcagagtgg tataa
           ========== =====
HITS AT:   1-15

L8   ANSWER 2 OF 31  REGISTRY  COPYRIGHT 2002 ACS
RN   382495-74-1  REGISTRY
CN   GenBank E66921 (9CI)  (CA INDEX NAME)
SQL  15
```

```
SEQ      1 gggcgttatg ccgta
           ========== =====
HITS AT:   1-15

L8   ANSWER 3 OF 31  REGISTRY  COPYRIGHT 2002 ACS
RN   382495-64-9  REGISTRY
CN   GenBank E66911 (9CI)  (CA INDEX NAME)
SQL  21

SEQ      1 gaacgttcca gcgctgcgac a
           ========== ========== =
HITS AT:   1-21

L8   ANSWER 4 OF 31  REGISTRY  COPYRIGHT 2002 ACS
RN   382495-63-8  REGISTRY
CN   GenBank E66907 (9CI)  (CA INDEX NAME)
SQL  21

SEQ      1 gccgggttcg ttaatacggc a
           ========== ========== =
HITS AT:   1-21

L8   ANSWER 5 OF 31  REGISTRY  COPYRIGHT 2002 ACS
RN   382495-62-7  REGISTRY
CN   GenBank E66906 (9CI)  (CA INDEX NAME)
SQL  21

SEQ      1 gaacgttcca gcgctgcgac a
           ========== ========== =
HITS AT:   1-21

L8   ANSWER 6 OF 31  REGISTRY  COPYRIGHT 2002 ACS
RN   382495-61-6  REGISTRY
CN   GenBank E66904 (9CI)  (CA INDEX NAME)
SQL  21

SEQ      1 gccgggttcg ttaatacggc a
           ========== ========== =
HITS AT:   1-21

L8   ANSWER 7 OF 31  REGISTRY  COPYRIGHT 2002 ACS
RN   382495-60-5  REGISTRY
CN   GenBank E66903 (9CI)  (CA INDEX NAME)
SQL  21

SEQ      1 cagttatacc actctgcaac g
           ========== ========
HITS AT:   1-18

L8   ANSWER 8 OF 31  REGISTRY  COPYRIGHT 2002 ACS
RN   382495-56-9  REGISTRY
CN   GenBank E66857 (9CI)  (CA INDEX NAME)
SQL  21

SEQ      1 gaacgttcca gcgctgcgac a
           ========== ========== =
HITS AT:   1-21

L8   ANSWER 9 OF 31  REGISTRY  COPYRIGHT 2002 ACS
RN   382495-54-7  REGISTRY
CN   GenBank E66855 (9CI)  (CA INDEX NAME)
SQL  21
```

```
SEQ      1 gccgggttcg ttaatacggc a
           ========== ========== =
HITS AT:   1-21

L8   ANSWER 10 OF 31  REGISTRY  COPYRIGHT 2002 ACS
RN   382495-28-5  REGISTRY
CN   GenBank E30431 (9CI)  (CA INDEX NAME)
SQL  21

SEQ      1 gaacgttcca gcgctgcgac a
           ========== ========== =
HITS AT:   1-21

L8   ANSWER 11 OF 31  REGISTRY  COPYRIGHT 2002 ACS
RN   349162-65-8  REGISTRY
CN   Peptide nucleic acid, ([5-[(3aS,4S,6aR)-hexahydro-2-oxo-1H-thieno[3,4-
     d]imidazol-4-yl]-1-oxopentyl]-T-G-C-A-G-A-G-T-G-G-T-A-T-A-A-C-T-G)-OH
     (9CI)  (CA INDEX NAME)
NTE  singlestranded
     modified
-------------------------------------------------------------------------
 type            ------ location ------         description
-------------------------------------------------------------------------
modified base    t-1                          5'-substituted
-------------------------------------------------------------------------
SQL  18

SEQ      1 tgcagagtgg tataactg
           ========== =====
HITS AT:   1-15

L8   ANSWER 12 OF 31  REGISTRY  COPYRIGHT 2002 ACS
RN   323533-46-6  REGISTRY
CN   GenBank E66910 (9CI)  (CA INDEX NAME)
NTE  doublestranded
SQL  21

SEQ      1 cggtatccta ttcccgggag t
           ========== ========== =
HITS AT:   1-21

L8   ANSWER 13 OF 31  REGISTRY  COPYRIGHT 2002 ACS
RN   323533-45-5  REGISTRY
CN   GenBank E66909 (9CI)  (CA INDEX NAME)
NTE  doublestranded
SQL  21

SEQ      1 tctcagggga ccacatcggt g
           ========== ========== =
HITS AT:   1-21

L8   ANSWER 14 OF 31  REGISTRY  COPYRIGHT 2002 ACS
RN   323533-44-4  REGISTRY
CN   GenBank E66908 (9CI)  (CA INDEX NAME)
NTE  doublestranded
SQL  21

SEQ      1 ttaaccacac cccaccgggc a
           ========== ========== =
HITS AT:   1-21

L8   ANSWER 15 OF 31  REGISTRY  COPYRIGHT 2002 ACS
```

RN 323533-43-3 REGISTRY
CN GenBank E66905 (9CI) (CA INDEX NAME)
NTE doublestranded
SQL **21**

SEQ 1 ctgtgcctgt tactgggttt t
========== ========== =
HITS AT: 1-21

L8 ANSWER 16 OF 31 REGISTRY COPYRIGHT 2002 ACS
RN 323533-42-2 REGISTRY
CN GenBank E66902 (9CI) (CA INDEX NAME)
NTE doublestranded
SQL **18**

SEQ 1 tgcagagtgg tataactg
========== =====
HITS AT: 1-15

L8 ANSWER 17 OF 31 REGISTRY COPYRIGHT 2002 ACS
RN 323533-36-4 REGISTRY
CN GenBank E66868 (9CI) (CA INDEX NAME)
NTE doublestranded
SQL **15**

SEQ 1 tgcagagtgg tataa
========== =====
HITS AT: 1-15

L8 ANSWER 18 OF 31 REGISTRY COPYRIGHT 2002 ACS
RN 323533-35-3 REGISTRY
CN GenBank E66867 (9CI) (CA INDEX NAME)
NTE doublestranded
SQL **15**

SEQ 1 gggcgttatg ccgta
========== =====
HITS AT: 1-15

L8 ANSWER 19 OF 31 REGISTRY COPYRIGHT 2002 ACS
RN 323529-29-9 REGISTRY
CN GenBank E30227 (9CI) (CA INDEX NAME)
NTE doublestranded
SQL **21**

SEQ 1 cgttgcagag tggtataact g
======= ========
HITS AT: 4-18

L8 ANSWER 20 OF 31 REGISTRY COPYRIGHT 2002 ACS
RN 323529-28-8 REGISTRY
CN GenBank E30226 (9CI) (CA INDEX NAME)
NTE doublestranded
SQL **21**

SEQ 1 gccgggttcg ttaatacggc a
========== ========== =
HITS AT: 1-21

L8 ANSWER 21 OF 31 REGISTRY COPYRIGHT 2002 ACS
RN 323529-27-7 REGISTRY
CN GenBank E30225 (9CI) (CA INDEX NAME)
NTE doublestranded

SQL **21**

```
SEQ      1 gaacgttcca gcgctgcgac a
           ========== ========== =
HITS AT:   1-21
```

L8 ANSWER 22 OF 31 REGISTRY COPYRIGHT 2002 ACS
RN 259115-21-4 REGISTRY
CN 5: PN: WO0008136 SEQID: 5 unclaimed DNA (9CI) (CA INDEX NAME)
NTE singlestranded
SQL **46**

```
SEQ      1 aattctaata cgactcacta taggggaacg ttccagcgct gcgaca
                                   ===== ========== ======
HITS AT:   26-46
```

L8 ANSWER 23 OF 31 REGISTRY COPYRIGHT 2002 ACS
RN 221269-43-8 REGISTRY
CN DNA, d(C-G-T-T-G-C-A-G-A-G-T-G-G-T-A-T-A-A-C-T-G) (9CI) (CA INDEX NAME)
OTHER NAMES:
CN 4: PN: JP11332597 SEQID: 4 claimed DNA
SQL **21**

```
SEQ      1 cgttgcagag tggtataact g
              ======= ========
HITS AT:   4-18
```

L8 ANSWER 24 OF 31 REGISTRY COPYRIGHT 2002 ACS
RN 219942-28-6 REGISTRY
CN Peptide nucleic acid, (H-T-G-C-A-G-A-G-T-G-G-T-A-T-A-A)-NH2 (9CI) (CA INDEX NAME)
NTE singlestranded
modified

type	location	description
modified base	a-15	3'-deoxy
modified base	a-15	3'-nh2

SQL **15**

```
SEQ      1 tgcagagtgg tataa
           ========== =====
HITS AT:   1-15
```

L8 ANSWER 25 OF 31 REGISTRY COPYRIGHT 2002 ACS
RN 219942-27-5 REGISTRY
CN Peptide nucleic acid, (H-G-G-G-C-G-T-T-A-T-G-C-C-G-T-A)-NH2 (9CI) (CA INDEX NAME)
NTE singlestranded
modified

type	location	description
modified base	a-15	3'-deoxy
modified base	a-15	3'-nh2

SQL **15**

```
SEQ      1 gggcgttatg ccgta
           ========== =====
HITS AT:   1-15
```

L8 ANSWER 26 OF 31 REGISTRY COPYRIGHT 2002 ACS
RN 219903-55-6 REGISTRY
CN DNA, d(T-C-T-C-A-G-G-G-G-A-C-C-A-C-A-T-C-G-G-T-G) (9CI) (CA INDEX NAME)
NTE singlestranded
SQL **21**

SEQ 1 tctcagggga ccacatcggt g
========== ========== =
HITS AT: 1-21

L8 ANSWER 27 OF 31 REGISTRY COPYRIGHT 2002 ACS
RN 219903-54-5 REGISTRY
CN DNA, d(T-T-A-A-C-C-A-C-A-C-C-C-C-A-C-C-G-G-G-C-A) (9CI) (CA INDEX NAME)
OTHER NAMES:
CN 2: PN: WO0008136 SEQID: 2 unclaimed DNA
NTE singlestranded
SQL **21**

SEQ 1 ttaaccacac cccaccgggc a
========== ========== =
HITS AT: 1-21

L8 ANSWER 28 OF 31 REGISTRY COPYRIGHT 2002 ACS
RN 219903-53-4 REGISTRY
CN DNA, d(C-G-G-T-A-T-C-C-T-A-T-T-C-C-C-G-G-G-A-G-T) (9CI) (CA INDEX NAME)
OTHER NAMES:
CN 3: PN: WO0008136 SEQID: 3 unclaimed DNA
NTE singlestranded
SQL **21**

SEQ 1 cggtatccta ttcccgggag t
========== ========== =
HITS AT: 1-21

L8 ANSWER 29 OF 31 REGISTRY COPYRIGHT 2002 ACS
RN 219903-52-3 REGISTRY
CN DNA, d(G-A-A-C-G-T-T-C-C-A-G-C-G-C-T-G-C-G-A-C-A) (9CI) (CA INDEX NAME)
OTHER NAMES:
CN 2: PN: JP11332597 SEQID: 2 claimed DNA
CN 2: PN: JP11346798 SEQID: 2 claimed DNA
CN 4: PN: WO0008136 SEQID: 4 unclaimed DNA
SQL **21**

SEQ 1 gaacgttcca gcgctgcgac a
========== ========== =
HITS AT: 1-21

L8 ANSWER 30 OF 31 REGISTRY COPYRIGHT 2002 ACS
RN 219903-51-2 REGISTRY
CN DNA, d(C-T-G-T-G-C-C-T-G-T-T-A-C-T-G-G-G-T-T-T-T) (9CI) (CA INDEX NAME)
NTE singlestranded
SQL **21**

SEQ 1 ctgtgcctgt tactgggttt t
========== ========== =
HITS AT: 1-21

L8 ANSWER 31 OF 31 REGISTRY COPYRIGHT 2002 ACS
RN 219903-50-1 REGISTRY
CN DNA, d(G-C-C-G-G-G-T-T-C-G-T-T-A-A-T-A-C-G-G-C-A) (9CI) (CA INDEX NAME)
OTHER NAMES:
CN 1: PN: WO0008136 SEQID: 1 unclaimed DNA
CN 3: PN: JP11332597 SEQID: 3 claimed DNA

SQL **21**

SEQ 1 gccgggttcg ttaatacggc a
========== ========== =
HITS AT: 1-21

FILE 'CAPLUS' ENTERED AT 09:29:47 ON 01 MAR 2002

FILE COVERS 1907 - 1 Mar 2002 VOL 136 ISS 9
FILE LAST UPDATED: 27 Feb 2002 (20020227/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

CAS roles have been modified effective December 16, 2001. Please check your SDI profiles to see if they need to be revised. For information on CAS roles, enter HELP ROLES at an arrow prompt or use the CAS Roles thesaurus (/RL field) in this file.

The P indicator for Preparations was not generated for all of the CAS Registry Numbers that were added to the CAS files between 12/27/01 and 1/23/02. As of 1/23/02, the situation has been resolved. Searches and/or SDIs in the H/Z/CA/CAplus files incorporating CAS Registry Numbers with the P indicator executed between 12/27/01 and 1/23/02 may be incomplete. See the NEWS message on this topic for more information.

L9 6 L8

=> d ibib ab hitrn l9 1-6; fil hom

L9 ANSWER 1 OF 6 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:876562 CAPLUS
DOCUMENT NUMBER: 135:132859
TITLE: Detection of PCR products of Escherichia coli O157:H7 in human stool samples using surface plasmon resonance (SPR)
AUTHOR(S): Kai, E.; Ikebukuro, K.; Hoshina, S.; Watanabe, H.; Karube, I.
CORPORATE SOURCE: Research Center for Advanced Science and Technology, The University of Tokyo, Meguro-ku, Tokyo, 153-8904, Japan
SOURCE: FEMS Immunol. Med. Microbiol. (2000), 29(4), 283-288
CODEN: FIMIEV; ISSN: 0928-8244
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A method for the rapid detection of verotoxin-producing Escherichia coli O157:H7 in stools was evaluated. Strains possessing Shiga toxin-2 (stx-2) genes were isolated from stool samples and amplified using oligonucleotide primers. Stools spiked with cultured E. coli O157:H7 (strain 298 or strain 1646) were detected to be polymerase chain reaction (PCR) pos. at 102 cfu per 0.1 g of stool. Stool samples from patients and healthy carriers showed a high correlation between pos. results for a PCR and the presence of verotoxin-producing E. coli O157:H7, confirmed by isolation of serotype O157:H7 on sorbitol MacConkey medium (10 of 10 stool samples). These PCR products could be detected using a BIAcore 2000 surface plasmon resonance device using peptide nucleic acid as a sensor probe. In this report we use this method for the rapid detection of DNA from significant pathogenic organisms.

IT **219903-50-1 219903-52-3 219903-54-5 219903-55-6** – use Registry # to match citation to sequence

RL: BUU (Biological use, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(PCR primer; detection of PCR products of Escherichia coli O157:H7 in human stool samples using surface plasmon resonance (SPR))

IT **349162-65-8**

RL: BUU (Biological use, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(PNA probe; detection of PCR products of Escherichia coli O157:H7 in human stool samples using surface plasmon resonance (SPR))

REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:117140 CAPLUS
DOCUMENT NUMBER: 132:176563
TITLE: Removal of interfering components with an organic solvent upon an enzymatic amplification of nucleic acid
INVENTOR(S): Karube, Isao; Hoshina, Sadayori; Ikebukuro, Kazunori
PATENT ASSIGNEE(S): Japan
SOURCE: PCT Int. Appl., 24 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000008136	A1	20000217	WO 1999-JP4189	19990803
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 49340	A1	20000228	AU 1999-49340	19990803

PRIORITY APPLN. INFO.:
JP 1998-220446 A 19980804
JP 1999-95600 A 19990401
WO 1999-JP4189 W 19990803

AB A method is described for amplifying the nucleic acid of cells (e.g., microorganism, blood) contained in a test sample without being affected by interfering components coexisting in the sample. In this method, various factors inhibitory to the reaction of enzymic amplification of a nucleic acid is eliminated using a hydrophilic or amphoteric org. solvent with a

specific inductive capacity of 5-40 (e.g., 70% aq. ethanol, methanol, 2-propanol, acetone, acetonitrile, dimethylsulfoxide, butanol, 2-butanol, Et acetate). PCR reaction can be carried out after washing with an org. solvent even a fecal sample which was supposed to be subjected to the genome extn. and purifn. prior to PCR in the conventional method. Pathogenic Escherichia coli O157 was detected in fecal samples by this method using appropriate primers.

IT **219903-50-1 219903-52-3 219903-53-4**
219903-54-5 259115-21-4, 5: PN: WO0008136 SEQID: 5
unclaimed DNA
RL: PRP (Properties)
(unclaimed nucleotide sequence; removal of interfering components with an org. solvent upon an enzymic amplification of nucleic acid)

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:801297 CAPLUS
DOCUMENT NUMBER: 132:45788
TITLE: PCR and polarized fluorescence-based method for detecting Vero toxin-producing bacteria
INVENTOR(S): Tsuruoka, Makoto; Karube, Masao; Hashimoto, Kunihiko
PATENT ASSIGNEE(S): Nishikawa Rubber Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11346798	A2	19991221	JP 1998-156208	19980604

AB Described is a speedy method for detecting Vero toxin-producing bacteria by amplifying the sample DNA with 1-200 nM fluorescently labeled primers and analyzing the amplified DNA products by polarized fluorescence. The method was demonstrated by detecting pathogenic Escherichia coli strain O157:H7 using FITC-labeled primers. The entire procedures requires less than 4 h and thus is useful for speedy diagnosis of food poisoning.

IT **219903-52-3**
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(primer; PCR and polarized fluorescence-based method for detecting Vero toxin-producing bacteria)

L9 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:772212 CAPLUS
DOCUMENT NUMBER: 132:19603
TITLE: A method of quantifying nucleic acids utilizing asymmetric PCR and fluorescence polarization
INVENTOR(S): Tsuruoka, Makoto; Karube, Masao; Hashimoto, Kunihiko
PATENT ASSIGNEE(S): Nishikawa Rubber Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11332597	A2	19991207	JP 1998-143197	19980525

AB A quick, sensitive, and reproducible method of quantifying nucleic acids

utilizing asym. PCR and fluorescence polarization is reported. The method relies on asym. PCR to amplify two sets of strands of unequal length; one set longer than the other set, using two sets of primers. The concn. of primers is adjusted so that the one strand of each set is selectively amplified more than the other strand. Those overamplified strands of unequal length are hybridized to form hybrid nucleic acids having a single stranded overhang at one end. A fluorescent labeled oligonucleotide probe having complementary sequence to the single strand portion of the hybrid is then hybridized to the hybrid while the fluorescence polarization is concurrently measured. By monitoring the change in fluorescence polarization, which is dependent on the amt. of nucleic acid sample with the amt. of fluorescent labeled oligonucleotide probe being const., the amt. of nucleic acid can be measured. The method was applied to the detection of amt. of Verotoxin 2 (VT2) gene in E. Coli O157:H7 strain.

IT **219903-50-1 219903-52-3**
RL: ARG (Analytical reagent use); PRP (Properties); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(nucleotide sequence, E. Coli O157:H7 Verotoxin 2-specific primer for asym. PCR; a method of quantifying nucleic acids utilizing asym. PCR and fluorescence polarization)

IT **221269-43-8P**
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(nucleotide sequence, fluorescent labeled oligonucleotide probe targeting E. Coli O157:H7 Verotoxin 2; a method of quantifying nucleic acids utilizing asym. PCR and fluorescence polarization)

L9 ANSWER 5 OF 6 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:64975 CAPLUS
DOCUMENT NUMBER: 130:134948
TITLE: PNA probes and surface plasmon resonance for detecting DNA
INVENTOR(S): Karube, Isao; Sawata, Shinya; Nagata, Ryohei
PATENT ASSIGNEE(S): Dai Nippon Printing Co., Ltd., Japan
SOURCE: PCT Int. Appl., 39 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9902730	A1	19990121	WO 1998-JP3077	19980709
W: US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
JP 11332595	A2	19991207	JP 1998-141433	19980522
EP 950718	A1	19991020	EP 1998-931022	19980709
R: DE, FR, GB, IT				

PRIORITY APPLN. INFO.:
JP 1997-183710 19970709
JP 1998-75350 19980324
JP 1998-141433 19980522
WO 1998-JP3077 19980709

AB Disclosed is a PCR-based method for detecting a target DNA sequence by a hybridization procedure using PNA (peptide nucleic acid) probes to replace the conventional DNA probes. The degree of hybridization is detd. by surface plasmon resonance (SPR). The method reduces the influences of the salt concn. during signal detection and thus improves the sensitivity. The PNA probes may also be immobilized on the detector tips of SPR. Detection of pathogen Escherichia coli strain O-157 and other toxin-producing pathogens by this method was demonstrated.

IT **219903-52-3P**
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(antisense primer for detecting DNA of Escherichia coli strain O-157)
IT **219942-27-5DP**, conjugates with biotin
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(immobilized PNA probes and surface plasmon resonance for detecting vero toxin I Escherichia coli strain O-157)
IT **219942-28-6DP**, conjugates with biotin
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(immobilized PNA probes and surface plasmon resonance for detecting vero toxin II Escherichia coli strain O-157)
IT **219903-50-1P 219903-51-2P 219903-53-4P**
219903-54-5P 219903-55-6P
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(sense primer for detecting DNA of Escherichia coli strain O-157)
REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 6 OF 6 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:17746 CAPLUS
DOCUMENT NUMBER: 130:232915
TITLE: Detection of PCR products in solution using surface plasmon resonance
AUTHOR(S): Kai, Eriko; Sawata, Shinya; Ikebukuro, Kazunori; Iida, Tetsuya; Honda, Takeshi; Karube, Isao
CORPORATE SOURCE: Research Center for Advanced Science and Technology, The University of Tokyo, Tokyo, 153-8904, Japan
SOURCE: Anal. Chem. (1999), 71(4), 796-800
CODEN: ANCHAM; ISSN: 0003-2700
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Polymerase chain reaction (PCR) products were detected using a flow injection-type sensor based on surface plasmon resonance. Asym. PCR was used to amplify the target DNA sequence, and two products with different length were produced. The novelty of our DNA detection system was that our target DNA was double-stranded but the probe binding site, located in the 3'-terminus, was single-stranded. This avoids the formation of intra- and intermol. complexes. This novel design permitted us not only to detect PCR product but also to develop a rapid detection system for the detection of the verotoxin 2 gene of Escherichia coli O157:H7.
IT **219903-53-4**
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(primer P-a; detection of Escherichia coli verotoxin 2 gene PCR products in soln. using surface plasmon resonance)
IT **219903-55-6**
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(primer P-b; detection of Escherichia coli verotoxin 2 gene PCR products in soln. using surface plasmon resonance)
IT **219903-54-5**
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(primer P-c; detection of Escherichia coli verotoxin 2 gene PCR products in soln. using surface plasmon resonance)
IT **219903-50-1**
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)

(primer P-d; detection of Escherichia coli verotoxin 2 gene PCR products in soln. using surface plasmon resonance)

IT **219903-52-3**
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(primer aP-b; detection of Escherichia coli verotoxin 2 gene PCR products in soln. using surface plasmon resonance)

IT **221269-43-8D**, biotin conjugate
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(probe; detection of Escherichia coli verotoxin 2 gene PCR products in soln. using surface plasmon resonance)

REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

FILE 'HOME' ENTERED AT 09:30:35 ON 01 MAR 2002

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=> fil capl; d que 14; d que 16; s 14 or 16
FILE 'CAPLUS' ENTERED AT 10:03:10 ON 01 MAR 2002
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2002 AMERICAN CHEMICAL SOCIETY (ACS)
```


FILE COVERS 1907 - 1 Mar 2002 VOL 136 ISS 9
FILE LAST UPDATED: 27 Feb 2002 (20020227/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

CAS roles have been modified effective December 16, 2001. Please check your SDI profiles to see if they need to be revised. For information on CAS roles, enter HELP ROLES at an arrow prompt or use the CAS Roles thesaurus (/RL field) in this file.

The P indicator for Preparations was not generated for all of the CAS Registry Numbers that were added to the CAS files between 12/27/01 and 1/23/02. As of 1/23/02, the situation has been resolved. Searches and/or SDIs in the H/Z/CA/CAplus files incorporating CAS Registry Numbers with the P indicator executed between 12/27/01 and 1/23/02 may be incomplete. See the NEWS message on this topic for more information.

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L1          784 SEA FILE=CAPLUS ABB=ON  KARUBE I?/AU
L2           54 SEA FILE=CAPLUS ABB=ON  SAWATA S?/AU
L3          309 SEA FILE=CAPLUS ABB=ON  NAGATA R?/AU
L4            2 SEA FILE=CAPLUS ABB=ON  L1 AND L2 AND L3



L1          784 SEA FILE=CAPLUS ABB=ON  KARUBE I?/AU
L2           54 SEA FILE=CAPLUS ABB=ON  SAWATA S?/AU
L3          309 SEA FILE=CAPLUS ABB=ON  NAGATA R?/AU
L5         7928 SEA FILE=CAPLUS ABB=ON  (PROTEIN OR PEPTIDE)(W)NUCLEIC ACID#
                OR PNA#
L6            6 SEA FILE=CAPLUS ABB=ON  (L1 OR L2 OR L3) AND L5



L13           7 L4 OR L6

=> fil medl jic biosis biotechno esbiobase confsci embase biotechds wpids
FILE 'MEDLINE' ENTERED AT 10:03:22 ON 01 MAR 2002

FILE 'JICST-EPLUS' ENTERED AT 10:03:22 ON 01 MAR 2002
COPYRIGHT (C) 2002 Japan Science and Technology Corporation (JST)

FILE 'BIOSIS' ENTERED AT 10:03:22 ON 01 MAR 2002
COPYRIGHT (C) 2002 BIOLOGICAL ABSTRACTS INC.(R)
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FILE 'BIOTECHNO' ENTERED AT 10:03:22 ON 01 MAR 2002

FILE 'ESBIOBASE' ENTERED AT 10:03:22 ON 01 MAR 2002

FILE 'CONFSCI' ENTERED AT 10:03:22 ON 01 MAR 2002

FILE 'EMBASE' ENTERED AT 10:03:22 ON 01 MAR 2002

FILE 'BIOTECHDS' ENTERED AT 10:03:22 ON 01 MAR 2002

FILE 'WPIDS' ENTERED AT 10:03:22 ON 01 MAR 2002

=> d que l10; d que l12; s l10 or l12
L7 1686 SEA KARUBE I?/AU
L8 89 SEA SAWATA S?/AU
L9 902 SEA NAGATA R?/AU
L10 4 SEA L7 AND L8 AND L9

L7 1686 SEA KARUBE I?/AU
L8 89 SEA SAWATA S?/AU
L9 902 SEA NAGATA R?/AU
L11 27911 SEA (PROTEIN OR PEPTIDE)(W) NUCLEIC ACID# OR PNA#
L12 23 SEA (L7 OR L8 OR L9) AND L11

L14 25 L10 OR L12

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FILE 'MEDLINE' ENTERED AT 10:04:32 ON 01 MAR 2002

FILE 'JICST-EPLUS' ENTERED AT 10:04:32 ON 01 MAR 2002

FILE 'BIOSIS' ENTERED AT 10:04:32 ON 01 MAR 2002

FILE 'BIOTECHNO' ENTERED AT 10:04:32 ON 01 MAR 2002

FILE 'ESBIOBASE' ENTERED AT 10:04:32 ON 01 MAR 2002

FILE 'CONFSCI' ENTERED AT 10:04:32 ON 01 MAR 2002

FILE 'EMBASE' ENTERED AT 10:04:32 ON 01 MAR 2002

FILE 'BIOTECHDS' ENTERED AT 10:04:32 ON 01 MAR 2002

FILE 'WPIDS' ENTERED AT 10:04:32 ON 01 MAR 2002

PROCESSING COMPLETED FOR L13
PROCESSING COMPLETED FOR L14
L15 11 DUP REM L13 L14 (21 DUPLICATES REMOVED)
ANSWERS '1-7' FROM FILE CAPLUS
ANSWERS '8-9' FROM FILE MEDLINE
ANSWER '10' FROM FILE JICST-EPLUS
ANSWER '11' FROM FILE CONFSCI

=> **d ibib ab 1-11**;fil hom

L15 ANSWER 1 OF 11 CAPLUS DUPLICATE 1
ACCESSION NUMBER: 2000:876562 CAPLUS
DOCUMENT NUMBER: 135:132859
TITLE: Detection of PCR products of Escherichia coli O157:H7 in human stool samples using surface plasmon resonance (SPR)
AUTHOR(S): Kai, E.; Ikebukuro, K.; Hoshina, S.; Watanabe, H.; **Karube, I.**
CORPORATE SOURCE: Research Center for Advanced Science and Technology, The University of Tokyo, Meguro-ku, Tokyo, 153-8904, Japan
SOURCE: FEMS Immunol. Med. Microbiol. (2000), 29(4), 283-288
CODEN: FIMIEV; ISSN: 0928-8244
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A method for the rapid detection of verotoxin-producing Escherichia coli O157:H7 in stools was evaluated. Strains possessing Shiga toxin-2 (stx-2) genes were isolated from stool samples and amplified using oligonucleotide primers. Stools spiked with cultured E. coli O157:H7 (strain 298 or strain 1646) were detected to be polymerase chain reaction (PCR) pos. at 102 cfu per 0.1 g of stool. Stool samples from patients and healthy carriers showed a high correlation between pos. results for a PCR and the presence of verotoxin-producing E. coli O157:H7, confirmed by isolation of serotype O157:H7 on sorbitol MacConkey medium (10 of 10 stool samples). These PCR products could be detected using a BIAcore 2000 surface plasmon resonance device using **peptide nucleic acid** as a sensor probe. In this report we use this method for the rapid detection of DNA from significant pathogenic organisms.
REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L15 ANSWER 2 OF 11 CAPLUS DUPLICATE 3
ACCESSION NUMBER: 1999:64975 CAPLUS
DOCUMENT NUMBER: 130:134948
TITLE: **PNA** probes and surface plasmon resonance for detecting DNA
INVENTOR(S): **Karube, Isao; Sawata, Shinya; Nagata, Ryohei**
PATENT ASSIGNEE(S): Dai Nippon Printing Co., Ltd., Japan
SOURCE: PCT Int. Appl., 39 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

WO 9902730 A1 19990121 WO 1998-JP3077 19980709
W: US
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE
JP 11332595 A2 19991207 JP 1998-141433 19980522
EP 950718 A1 19991020 EP 1998-931022 19980709
R: DE, FR, GB, IT
PRIORITY APPLN. INFO.: JP 1997-183710 19970709
JP 1998-75350 19980324
JP 1998-141433 19980522
WO 1998-JP3077 19980709

AB Disclosed is a PCR-based method for detecting a target DNA sequence by a hybridization procedure using **PNA** (**peptide nucleic acid**) probes to replace the conventional DNA probes. The degree of hybridization is detd. by surface plasmon resonance (SPR). The method reduces the influences of the salt concn. during signal detection and thus improves the sensitivity. The **PNA** probes may also be immobilized on the detector tips of SPR. Detection of pathogen Escherichia coli strain O-157 and other toxin-producing pathogens by this method was demonstrated.

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L15 ANSWER 3 OF 11 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 4
ACCESSION NUMBER: 1999:631469 CAPLUS
DOCUMENT NUMBER: 131:240061
TITLE: Biosensitive element for surface plasmon resonance measurements, and its method of manufacture
INVENTOR(S): Nakamura, Runa; Nakamura, Hiroyuki; **Nagata, Ryohei**; **Karube, Isao**; Muguruma, Hitoshi
PATENT ASSIGNEE(S): Dai Nippon Printing Co., Ltd., Japan
SOURCE: Eur. Pat. Appl., 39 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 945721	A2	19990929	EP 1999-105079	19990324
EP 945721	A3	20000126		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2000039401	A2	20000208	JP 1999-12233	19990120

PRIORITY APPLN. INFO.: JP 1998-76144 19980324
JP 1998-134780 19980518
JP 1999-12233 19990120

AB An objective of the present invention is to provide a measuring chip for a surface plasmon resonance sensor that can detect a small amt. of target substances in high sensitivity. The present invention provides a measuring chip for a surface plasmon resonance sensor comprising a metal layer, one or more plasma polymn. layers formed on said metal layer, and a biol. active substance immobilized on the surface of said plasma polymn. layer.

L15 ANSWER 4 OF 11 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 5
ACCESSION NUMBER: 1999:411584 CAPLUS
DOCUMENT NUMBER: 131:180408
TITLE: Application of **peptide nucleic acid** to the direct detection of deoxyribonucleic acid amplified by polymerase chain reaction

AUTHOR(S): **Sawata, Shinya**; Kai, Eriko; Ikebukuro, Kazunori; Iida, Tetsuya; Honda, Takeshi; **Karube, Isao**
CORPORATE SOURCE: Research Center for Advanced Science and Technology, The University of Tokyo, Tokyo, 153-8904, Japan
SOURCE: Biosens. Bioelectron. (1999), 14(4), 397-404
CODEN: BBIOE4; ISSN: 0956-5663
PUBLISHER: Elsevier Science S.A.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Double-stranded DNA amplified by polymerase chain reaction (PCR) was detected by **peptide nucleic acid** (**PNA**) using a BIAcore 2000 biosensor based on surface plasmon resonance (SPR). **PNA** is an artificial oligo amide that is capable of forming highly stable complexes with complementary oligonucleotides. We succeeded in the direct detection of double-stranded DNA, amplified by PCR with high-sequence specificity. It was shown that the target DNA was available for detection over the range of 40-160 nM. Therefore, the detection limit was 7.5 pmol of the target DNA (143 bases, applied vol. 30 .mu.l). Our DNA detection system, the combination of BIAcore and the probe **PNA**, could detect the target DNA with good reproducibility. In this report, we show that our system is a powerful tool for the diagnosis of pathol. significant DNA.
REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L15 ANSWER 5 OF 11 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 6
ACCESSION NUMBER: 1998:747617 CAPLUS
DOCUMENT NUMBER: 130:1167
TITLE: PCR-based method for detecting target nucleotide sequence converted into partly double strands
INVENTOR(S): **Karube, Isao; Sawata, Shinya; Nagata, Ryohei**
PATENT ASSIGNEE(S): Dai Nippon Printing Co., Ltd., Japan
SOURCE: PCT Int. Appl., 37 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9850581	A1	19981112	WO 1998-JP2039	19980508
W: US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
JP 11332566	A2	19991207	JP 1998-123371	19980506
EP 915174	A1	19990512	EP 1998-919518	19980508
R: DE, FR, GB, IT				

PRIORITY APPLN. INFO.:
JP 1997-117725 19970508
JP 1998-74442 19980323
JP 1998-123371 19980506
WO 1998-JP2039 19980508

AB A method for detecting a target nucleotide sequence with improved sensitivity is described. This method involves the step of converting the target nucleotide sequence into a partly double-stranded nucleotide sequence via unsymetric amplification by PCR; and the step of detecting the partly double-stranded nucleotide sequence with a probe complementary to the target nucleotide sequence. The method was demonstrated by detecting type II verotoxin gene of enteropathogenic Escherichia coli O-157 using a surface plasmon resonance biosensor.
REFERENCE COUNT: 45 THERE ARE 45 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L15 ANSWER 6 OF 11 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:318949 CAPLUS
DOCUMENT NUMBER: 134:362365
TITLE: Detection of toxic chemicals with high sensitivity by measuring the quantity of induced P450 mRNAs based on surface plasmon resonance
AUTHOR(S): Oyama, Masaaki; Ikeda, Takeshi; Lim, Tae-Kyu; Ikebukuro, Kazunori; Masuda, Yuzo; **Karube, Isao**
CORPORATE SOURCE: Research Center for Advanced Science and Technology, University of Tokyo, Tokyo, 153-8904, Japan
SOURCE: Biotechnol. Bioeng. (2001), Volume Date 2000-2001, 71(3), 217-222
CODEN: BIBIAU; ISSN: 0006-3592
PUBLISHER: John Wiley & Sons, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB In this study we describe a novel sensor system to detect toxic chems. based on measurement of the quantity of Saccharomyces cerevisiae P 450 mRNAs induced by them. Detection was conducted using a flow-injection-type sensor system based on surface plasmon resonance (SPR). The DNA and **peptide nucleic acid** (**PNA**) probes contg. a complementary sequence to a part of P 450 mRNA were immobilized on the sensor chip and the P 450 mRNAs hybridized to the probes were quantified. We succeeded in detecting 10 ng/L (10 ppt) of atrazine using both DNA and **PNA** probes. Using this sensor system, we were able to detect bisphenol A in addn. to atrazine. Furthermore, we achieved higher sensitivity by amplifying the target P 450 mRNA based on nucleic acid sequence-based amplification (NASBA). This method allows for sensitive, rapid, and easy detection of some toxic chems.
REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L15 ANSWER 7 OF 11 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1998:295239 CAPLUS
DOCUMENT NUMBER: 129:36904
TITLE: Novel DNA detection system of flow injection analysis. (2). The distinctive properties of a novel system employing **PNA** (**peptide nucleic acid**) as a probe for specific DNA detection
AUTHOR(S): Kai, Eriko; **Sawata, Shinya**; Ikebukuro, Kazunori; Iida, Tetsuya; Honda, Takeshi; **Karube, Isao**
CORPORATE SOURCE: Research Center for Advanced Science and Technology, University of Tokyo, Tokyo, 153, Japan
SOURCE: Nucleic Acids Symp. Ser. (1997), 37(Symposium on Nucleic Acids Chemistry, 1997), 321-322
CODEN: NACSD8; ISSN: 0261-3166
PUBLISHER: Oxford University Press
DOCUMENT TYPE: Journal
LANGUAGE: English
AB In order to realize immediate detection of a double stranded DNA amplified by Polymerase Chain Reaction (PCR), we applied **Peptide Nucleic Acid** (**PNA**) to the probe of DNA detection system using Surface Plasmon Resonance (SPR). We report our success in immediate detection of PCR products soln. with high sequence-specificity.

L15 ANSWER 8 OF 11 MEDLINE DUPLICATE 2

ACCESSION NUMBER: 2001383501 MEDLINE
DOCUMENT NUMBER: 21185776 PubMed ID: 11291031
TITLE: Detection of toxic chemicals with high sensitivity by measuring the quantity of induced P450 mRNAs based on surface plasmon resonance.
AUTHOR: Oyama M; Ikeda T; Lim T; Ikebukuro K; Masuda Y; **Karube I**
CORPORATE SOURCE: Research Center for Advanced Science and Technology, University of Tokyo, 4-6-1 Komaba, Meguro-ku, Tokyo 153-8904, Japan.
SOURCE: BIOTECHNOLOGY AND BIOENGINEERING, (2000-2001) 71 (3) 217-22.
Journal code: A6N; 7502021. ISSN: 0006-3592.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200107
ENTRY DATE: Entered STN: 20010709
Last Updated on STN: 20010709
Entered Medline: 20010705

AB In this study we describe a novel sensor system to detect toxic chemicals based on measurement of the quantity of Saccharomyces cerevisiae P450 mRNAs induced by them. Detection was conducted using a flow-injection-type sensor system based on surface plasmon resonance (SPR). The DNA and **peptide nucleic acid** (**PNA**) probes containing a complementary sequence to a part of P450 mRNA were immobilized on the sensor chip and the P450 mRNAs hybridized to the probes were quantified. We succeeded in detecting 10 ng/L (10 ppt) of atrazine using both DNA and **PNA** probes. Using this sensor system, we were able to detect bisphenol A in addition to atrazine. Furthermore, we achieved higher sensitivity by amplifying the target P450 mRNA based on nucleic acid sequence-based amplification (NASBA). This method allows for sensitive, rapid, and easy detection of some toxic chemicals. Copyright 2001 John Wiley & Sons, Inc.

L15 ANSWER 9 OF 11 MEDLINE
ACCESSION NUMBER: 1998247221 MEDLINE
DOCUMENT NUMBER: 98247221 PubMed ID: 9586129
TITLE: Novel DNA detection system of flow injection analysis (2). The distinctive properties of a novel system employing **PNA** (**peptide nucleic acid**) as a probe for specific DNA detection.
AUTHOR: Kai E; **Sawata S**; Ikebukuro K; Iida T; Honda T; **Karube I**
CORPORATE SOURCE: Research Center for Advanced Science and Technology, University of Tokyo, Japan.
SOURCE: NUCLEIC ACIDS SYMPOSIUM SERIES, (1997) (37) 321-2.
Journal code: O8N; 8007206. ISSN: 0261-3166.
PUB. COUNTRY: ENGLAND: United Kingdom
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199807
ENTRY DATE: Entered STN: 19980731
Last Updated on STN: 19980731
Entered Medline: 19980723

AB In order to realize immediate detection of a double stranded DNA amplified by Polymerase Chain Reaction (PCR), we applied **Peptide Nucleic Acid** (**PNA**) to the probe of DNA detection system using Surface Plasmon Resonance (SPR). We report our success in immediate detection of PCR products solution with high sequence-specificity.

L15 ANSWER 10 OF 11 JICST-EPlus COPYRIGHT 2002 JST
ACCESSION NUMBER: 980718889 JICST-EPlus
TITLE: A novel DNA sensor by flow injection analysis.
AUTHOR: KAI ERIKO
IKEBUKURO KAZUNORI
HOSHINA SADAYORI
WATANABE HARUO
IIDA TETSUYA
HONDA TAKESHI
KARUBE ISAO
SOURCE: Nippon Kagakkai Koen Yokoshu, (1998) vol. 74th, no. 2, pp. 1290. Journal Code: S0493A
ISSN: 0285-7626
PUB. COUNTRY: Japan
LANGUAGE: Japanese
STATUS: New
AB Rapid detection of pathologically significant DNA is necessary for diagnosis of many kinds of disease originated from specific DNA sequence. A novel system using flow injection type sensor, based on surface plasmon resonance(SPR), was constructed. For the detection of gene coding verotoxin 2 of enterohemorrhagic Escherichia coli O-157:H7, an oligonucleotide and a **peptide nucleic acid**(**PNA**) which had 18 bases were exploited as a sensor probe. In the first approach, asymmetric PCR products were shown to be suitable as the sample when a probe oligonucleotide was employed. In the next approach, in case of using probe **PNA**, PCR products could be detected after heat denaturing in 10% formamide. (author abst.)

L15 ANSWER 11 OF 11 CONFSCI COPYRIGHT 2002 CSA
ACCESSION NUMBER: 1998:58559 CONFSCI
DOCUMENT NUMBER: 98-058559
TITLE: Properties and comparisons with oligonucleotide and their close analogue: **PNA** (**Peptide Nucleic Acid**) as a probe for specfic DNA detection
AUTHOR: Kai, E.; **Sawata, S.**; Ikebukuro, K.; Yano, K.; Iida, T.; Honda, T.; **Karube, I.**
CORPORATE SOURCE: Univ. Tokyo, Japan
SOURCE: Biosensors & Bioelectronics, Institute of BioScience & Technology, Cranfield University, Cranfield, Beds MK43 0AL, United Kingdom; fax: +44 1234 752 401; URL: http://www.elsevier.nl:80/homepage/sah/bios98, Abstracts and full papers available..
Meeting Info.: 982 5025: 5th World Congress on Biosensors (9825025). Berlin (Germany). 3-5 Jun 1998. Institute of BioScience & Technology.
DOCUMENT TYPE: Conference
FILE SEGMENT: DCCP
LANGUAGE: English

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FILE COVERS 1907 - 1 Mar 2002 VOL 136 ISS 9
FILE LAST UPDATED: 27 Feb 2002 (20020227/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

CAS roles have been modified effective December 16, 2001. Please check your SDI profiles to see if they need to be revised. For information on CAS roles, enter HELP ROLES at an arrow prompt or use the CAS Roles thesaurus (/RL field) in this file.

The P indicator for Preparations was not generated for all of the CAS Registry Numbers that were added to the CAS files between 12/27/01 and 1/23/02. As of 1/23/02, the situation has been resolved. Searches and/or SDIs in the H/Z/CA/CAplus files incorporating CAS Registry Numbers with the P indicator executed between 12/27/01 and 1/23/02 may be incomplete. See the NEWS message on this topic for more information.

L1	784	SEA FILE=CAPLUS ABB=ON	KARUBE I?/AU
L2	54	SEA FILE=CAPLUS ABB=ON	SAWATA S?/AU
L3	309	SEA FILE=CAPLUS ABB=ON	NAGATA R?/AU
L16	1402	SEA FILE=CAPLUS ABB=ON	(ESCHERICHIA OR E)(W)COLI AND (O 157## OR O157?)
L17	12	SEA FILE=CAPLUS ABB=ON	(L1 OR L2 OR L3) AND L16

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L22 8 L17 NOT (L13) previously printed

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FILE 'MEDLINE' ENTERED AT 10:16:05 ON 01 MAR 2002

FILE 'JICST-EPLUS' ENTERED AT 10:16:05 ON 01 MAR 2002

FILE 'BIOSIS' ENTERED AT 10:16:05 ON 01 MAR 2002

FILE 'BIOTECHNO' ENTERED AT 10:16:05 ON 01 MAR 2002

FILE 'ESBIOBASE' ENTERED AT 10:16:05 ON 01 MAR 2002

FILE 'CONFSCI' ENTERED AT 10:16:05 ON 01 MAR 2002

FILE 'EMBASE' ENTERED AT 10:16:05 ON 01 MAR 2002

FILE 'BIOTECHDS' ENTERED AT 10:16:05 ON 01 MAR 2002

FILE 'WPIDS' ENTERED AT 10:16:05 ON 01 MAR 2002


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L8            89 SEA SAWATA S?/AU
L9           902 SEA NAGATA R?/AU
L19        12253 SEA (ESCHERICHIA OR E)(W)COLI AND (O 157## OR O157?)
L20           36 SEA (L7 OR L8 OR L9) AND L19


L23           25 L20 NOT L14
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previously printed

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PROCESSING COMPLETED FOR L22
PROCESSING COMPLETED FOR L23
L24           15 DUP REM L22 L23 (18 DUPLICATES REMOVED)
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                 ANSWER '9' FROM FILE MEDLINE
                 ANSWERS '10-13' FROM FILE JICST-EPLUS
                 ANSWER '14' FROM FILE CONFSCI
                 ANSWER '15' FROM FILE BIOTECHDS

=> d ibib ab 1-15;fil hom

L24  ANSWER 1 OF 15  CAPLUS  COPYRIGHT 2002 ACS        DUPLICATE 1
ACCESSION NUMBER:         2000:117140  CAPLUS
DOCUMENT NUMBER:          132:176563
TITLE:                    Removal of interfering components with an organic
                          solvent upon an enzymatic amplification of nucleic
                          acid
INVENTOR(S):              Karube, Isao; Hoshina, Sadayori; Ikebukuro,
                          Kazunori
PATENT ASSIGNEE(S):       Japan
SOURCE:                   PCT Int. Appl., 24 pp.
                          CODEN: PIXXD2
DOCUMENT TYPE:            Patent
LANGUAGE:                 Japanese
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.        KIND  DATE          APPLICATION NO.  DATE
     ----------------  ----  --------      ---------------  --------
     WO 2000008136      A1   20000217      WO 1999-JP4189   19990803
         W:  AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU,
             CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN,
             IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK,
             MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ,
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TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

AU 49340 A1 20000228 AU 1999-49340 19990803
PRIORITY APPLN. INFO.: JP 1998-220446 A 19980804
JP 1999-95600 A 19990401
WO 1999-JP4189 W 19990803

AB A method is described for amplifying the nucleic acid of cells (e.g., microorganism, blood) contained in a test sample without being affected by interfering components coexisting in the sample. In this method, various factors inhibitory to the reaction of enzymic amplification of a nucleic acid is eliminated using a hydrophilic or amphoteric org. solvent with a specific inductive capacity of 5-40 (e.g., 70% aq. ethanol, methanol, 2-propanol, acetone, acetonitrile, dimethylsulfoxide, butanol, 2-butanol, Et acetate). PCR reaction can be carried out after washing with an org. solvent even a fecal sample which was supposed to be subjected to the genome extn. and purifn. prior to PCR in the conventional method. Pathogenic **Escherichia coli O157** was detected in fecal samples by this method using appropriate primers.

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 2 OF 15 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 2
ACCESSION NUMBER: 2000:95018 CAPLUS
DOCUMENT NUMBER: 132:343864
TITLE: Application of chimeric RNA-DNA oligonucleotides to the detection of pathogenic microorganisms using surface plasmon resonance
AUTHOR(S): Miyachi, H.; Yano, K.; Ikebukuro, K.; Kono, M.; Hoshina, S.; **Karube, I.**
CORPORATE SOURCE: Meguro-ku, 4-6-1 Komaba, Research Center for Advanced Science and Technology, University of Tokyo, Tokyo, Japan
SOURCE: Analytica Chimica Acta (2000), 407(1-2), 1-10
CODEN: ACACAM; ISSN: 0003-2670
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Chimeric oligonucleotides consisting of 21 bases of RNA with six bases of DNA at the 3'-hydroxyl terminus (chimeric RNA-DNA primer) and the recombinant thermostable DNA polymerase derived from Thermus thermophilus (rTth DNA polymerase) were utilized to efficiently amplify DNA fragments using the conventional polymerase chain reaction (PCR). The reaction required the use of both DNA polymerase and reverse transcriptase during each thermal cycle to form a double-stranded DNA in which one terminus was an RNA:DNA hybrid. Due to the ability of rTth DNA polymerase to function as both the DNA polymerase and reverse transcriptase, a chimeric RNA-DNA primer was shown to serve as a primer in the conventional PCR procedure. We further demonstrate the advantages of using these PCR products to identify microorganisms using surface plasmon resonance (SPR) technol. This detection system was able to distinguish Shiga toxin-producing **Escherichia coli O157**:H7 strains from other bacteria such as Salmonella typhimurium and S. enteritidis.

REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 3 OF 15 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 3
ACCESSION NUMBER: 1999:620529 CAPLUS
DOCUMENT NUMBER: 131:240060
TITLE: A sensor for detecting **Escherichia coli O-157**-derived

verotoxins in blood
INVENTOR(S): Nakagawa, Yoshikazu; **Nagata, Ryohei**; Nakamura, Hiroyuki; Sato, Kimiharu
PATENT ASSIGNEE(S): Dainippon Printing Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11264819	A2	19990928	JP 1998-67299	19980317

AB A bedside monitor is provided for diagnosing **Escherichia coli O-157** infection by detecting verotoxins in blood. A surface plasmon resonance immunosensor (SPR sensor) is constructed using antibodies specific to verotoxins (VT1, VT2), and effectively used for detecting VT1 and VT2. The antibodies are immobilized onto the metal membrane fixed on a transparent base plate through hydrophobic or electrostatic binding generated by the membrane made of org. silicone (silane coupling agent), metal-fluorine compd. or mixt., metal-carbon compd. or mixt., siloxane, fluorine-contg. org. compd., or thiol compd.

L24 ANSWER 4 OF 15 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 4
ACCESSION NUMBER: 1999:565424 CAPLUS
DOCUMENT NUMBER: 131:196678
TITLE: Measurement tip/chip for **O- 157** detection
INVENTOR(S): **Nagata, Ryohei**; Nakamura, Hiroyuki; Nakagawa, Miwa; Sato, Kimiharu
PATENT ASSIGNEE(S): Dainippon Printing Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11242031	A2	19990907	JP 1998-45293	19980226

AB A chip for surface plasmon resonance biosensor, which is immobilized with anti **O-157** antibody, and can be used for whole blood is disclosed. The antibody for **O-157** is immobilized on the metal membrane which is placed on the transparent substrate through hydrophobic bond using silane coupling agent or the static electricity. The method is a simple, quick and no labeling is needed.

L24 ANSWER 5 OF 15 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 5
ACCESSION NUMBER: 1999:17746 CAPLUS
DOCUMENT NUMBER: 130:232915
TITLE: Detection of PCR products in solution using surface plasmon resonance
AUTHOR(S): Kai, Eriko; **Sawata, Shinya**; Ikebukuro, Kazunori; Iida, Tetsuya; Honda, Takeshi; **Karube, Isao**
CORPORATE SOURCE: Research Center for Advanced Science and Technology, The University of Tokyo, Tokyo, 153-8904, Japan
SOURCE: Anal. Chem. (1999), 71(4), 796-800
CODEN: ANCHAM; ISSN: 0003-2700
PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal
LANGUAGE: English
AB Polymerase chain reaction (PCR) products were detected using a flow injection-type sensor based on surface plasmon resonance. Asym. PCR was used to amplify the target DNA sequence, and two products with different length were produced. The novelty of our DNA detection system was that our target DNA was double-stranded but the probe binding site, located in the 3'-terminus, was single-stranded. This avoids the formation of intra- and intermol. complexes. This novel design permitted us not only to detect PCR product but also to develop a rapid detection system for the detection of the verotoxin 2 gene of **Escherichia coli** **O157**:H7.
REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 6 OF 15 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 6
ACCESSION NUMBER: 1999:680475 CAPLUS
DOCUMENT NUMBER: 131:318382
TITLE: Detection of **Escherichia coli** 0157:H7 DNA using two fluorescence polarization methods
AUTHOR(S): Ye, Bang-Ce; Ikebukuro, Kazunori; **Karube, Isao**
CORPORATE SOURCE: Res. Inst. Biochemistry, Key State Lab. Bioreactor Eng., East China Univ. Science Technology, Shanghai, 200237, Peop. Rep. China
SOURCE: Fresenius' J. Anal. Chem. (1999), 365(5), 452-457
CODEN: FJACES; ISSN: 0937-0633
PUBLISHER: Springer-Verlag
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Using stx 2 gene in verotoxin-producing **Escherichia coli** **O157**:H7 as a target DNA, polymerase chain reaction (PCR) amplification has been combined with fluorescence polarization (FP) by two distinct combination protocols. The first approach (PCR-probe-FP) requires that fluorescence labeled specific probes are hybridized with the asym. PCR product. In the second protocol (PCR-primer-FP), the fluorescence labeled primer is used in PCR amplification. In both methods, the PCR products are detected using fluorescence polarization. Hybridization (in the PCR-probe-FP method) and conversion (in the PCR-primer-FP method) of 5'-fluorescence labeled oligodeoxynucleotide to the PCR product are monitored by an increase in the anisotropy ratio. The results demonstrate the importance of asym. PCR (in the first method) and the selection of dye-modified primer concn. (in the second method) for designing a polarization strategy for the detection of DNA sequence. It has been found that the methods can be used for the identification of infectious agents. This system has also been applied to the detn. of **Escherichia coli O157**:H7 strains.
REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 7 OF 15 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 7
ACCESSION NUMBER: 1998:537137 CAPLUS
DOCUMENT NUMBER: 129:255653
TITLE: Quantitative analysis of polymerase chain reaction using anisotropy ratio and relative hydrodynamic volume of fluorescence polarization method
AUTHOR(S): Ye, Bang-Ce; Ikebukuro, Kazunori; **Karube, Isao**
CORPORATE SOURCE: Research Institute of Biochemistry, Key State Laboratory of Bioreactor Engineering, East China University of Science and Technology, Shanghai, 200237, Peop. Rep. China
SOURCE: Nucleic Acids Res. (1998), 26(15), 3614-3615
CODEN: NARHAD; ISSN: 0305-1048

PUBLISHER: Oxford University Press
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The method based on the combination of polymerase chain reaction (PCR) and fluorescence polarization is presented. A targeted DNA was amplified with a 5'-fluorescein labeled primer, using a 256 bp DNA fragment of stx2 gene in **Escherichia coli O157**:H7 (188-443 bp) as a template. The fluorescence anisotropy of the 5'-fluorescein labeled primer increased upon the polymn. through Taq polymerase. The conversion of primer to PCR product was quant. monitored by anisotropy ratio and relative hydrodynamic vol. This system was also applied to the detn. of **E.coli O157**:H7.

L24 ANSWER 8 OF 15 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 8
ACCESSION NUMBER: 1997:499629 CAPLUS
DOCUMENT NUMBER: 127:157260
TITLE: Rapid detection of pathogenic **Escherichia coli O157**. Fundamentals and application of DNA hybrid formation reaction
AUTHOR(S): Tsuruoka, Makoto; Fukuhara, Keiso; **Karube, Isao**
CORPORATE SOURCE: Sentan Kagaku Gijutsu Kenkyu Senta, Tokyo Daigaku, Tokyo, 153, Japan
SOURCE: Kagaku to Kyoiku (1997), 45(7), 392-393
CODEN: KAKYEY; ISSN: 0386-2151
PUBLISHER: Nippon Kagakkai
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Japanese
AB A review with 7 refs., on the method for detection of verotoxin gene of pathogenic **Escherichia coli O-157** by DNA hybridization and fluorescence polarization.

L24 ANSWER 9 OF 15 MEDLINE
ACCESSION NUMBER: 97241543 MEDLINE
DOCUMENT NUMBER: 97241543 PubMed ID: 9086791
TITLE: Rapid detection of the Escherichia cori verotoxin gene using fluorescence polarization.
AUTHOR: Tsuruoka M; Honda T; **Karube I**
CORPORATE SOURCE: Advanced Science and Technology Laboratory, City of Hiroshima.
SOURCE: NIPPON RINSHO. JAPANESE JOURNAL OF CLINICAL MEDICINE, (1997 Mar) 55 (3) 741-6. Ref: 10
Journal code: KIM; 0420546. ISSN: 0047-1852.
PUB. COUNTRY: Japan
Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LANGUAGE: Japanese
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199706
ENTRY DATE: Entered STN: 19970630
Last Updated on STN: 19970630
Entered Medline: 19970617
AB The effects of NaCl concentration, temperature and base-pair mismatches on the hybridization of two complementary single-stranded DNA 24-mers were investigated using a fluorescence polarization method. Over a temperature range of 46 degrees C to 56 degrees C in 0.8 M NaCl it was found that hybridization was essentially complete in under 10 minutes and that rapid in vitro determination of the target DNA was possible when the sample DNA had three or less base-pair mismatches in the 24-mer sequence. Polarization measurements on positive and negative samples showed excellent agreement with results obtained from electrophoresis. Under our optimized conditions, a 23 base-pair single-stranded DNA sequence of the

Verotoxin gene (VT2) of **Escherichia coli**, previously multiplied using PCR (40 cycles), could be detected within 10 minutes.

L24 ANSWER 10 OF 15 JICST-EPlus COPYRIGHT 2002 JST
ACCESSION NUMBER: 1000316137 JICST-EPlus
TITLE: Rapid detection of DNA using chimeric RNA-DNA oligonucleotides.
AUTHOR: MIYACHI HIROTAKA; YANO KAZUYOSHI; IKEBUKURO KAZUNORI; **KARUBE ISAO**
KONO MIDORI; HOSHINA SADAYORI
CORPORATE SOURCE: Univ. of Tokyo
Jikei Univ. School of Medicine
SOURCE: Nippon Kagakkai Baiotekunoroji Bukai Shinpojiumu Koen Yoshishu, (1999) vol. 4th, pp. 45. Journal Code: L3054A
PUB. COUNTRY: Japan
LANGUAGE: Japanese
STATUS: New
AB Duplex formation in the target DNA is one of the problems detecting DNA resulted in low hybridization signal. Since long single-stranded DNA fold in themselves due to intramolecular base pairing, we developed a method to construct "unilateral protruding DNA" to minimize the formation of secondary structures within the target DNA fragments. The chimeric RNA-DNA oligonucleotides and the recombinant thermostable DNA polymerase derived from Thermus thermophilus(rTth DNA polymerase) were utilized to efficiently amplify DNA fragments using the conventional polymerase chain reaction(PCR). The reaction required the use of both DNA polymerase and reverse transcriptase during each thermal cycle to form a doublestranded DNA in which one terminus was an RNA:DNA hybrid. We further demonstrate the advantages of using these methods to identify sequence specificity using surface plasmon resonance(SPR) technology. This detection system was able to distinguish Shiga-toxin producing **Escherichia coli O157**:H7 strains from other bacteria such as Salmonella typhimurium and S. enteritidis. (author abst.)

L24 ANSWER 11 OF 15 JICST-EPlus COPYRIGHT 2002 JST
ACCESSION NUMBER: 990670310 JICST-EPlus
TITLE: Development of DNA sensor for the detection of **Escherichia coli O157**.
AUTHOR: IKEBUKURO KAZUNORI; KAI ERIKO; YANO KAZUYOSHI; **KARUBE ISAO**
CORPORATE SOURCE: Univ. of Tokyo, RCAST Res. Center for Adv. Sci. and Technol.
SOURCE: Denshi Joho Tsushin Gakkai Gijutsu Kenkyu Hokoku (IEIC Technical Report (Institute of Electronics, Information and Communication Enginners)), (1999) vol. 99, no. 159(OME99 34-42), pp. 1-5. Journal Code: S0532B (Fig. 2, Tbl. 1)
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article
LANGUAGE: Japanese
STATUS: New
AB Polymerase chain reaction(PCR) products were detected using a flow injection type sensor based on surface plasmon resonance(SPR). Asymmetric PCR was used to amplify the target DNA sequence and two products with different length were produced. The novelty of our DNA detection system was that our target DNA was double stranded but the probe binding site, located in the 3'-terminus, was single stranded. This avoids the formation of intra- and intermolecular complexes. This novel design permitted us not only to detect PCR product with high-sensitivity, but also to develop a rapid detection system for the detection of the verotoxin 2 gene of **Escherichia coli O157**:H7. (author abst.)

L24 ANSWER 12 OF 15 JICST-EPlus COPYRIGHT 2002 JST
ACCESSION NUMBER: 990670301 JICST-EPlus

TITLE: Development of DNA sensor for the detection of **Escherichia coli O157.**
AUTHOR: IKEBUKURO KAZUNORI; KAI ERIKO; YANO KAZUYOSHI; **KARUBE ISAO**
CORPORATE SOURCE: Univ. of Tokyo, RCAST Res. Center for Adv. Sci. and Technol.
SOURCE: Denshi Joho Tsushin Gakkai Gijutsu Kenkyu Hokoku (IEIC Technical Report (Institute of Electronics, Information and Communication Enginners)), (1999) vol. 99, no. 158(CPM99 29-37), pp. 1-5. Journal Code: S0532B (Fig. 2, Tbl. 1)
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article
LANGUAGE: Japanese
STATUS: New
AB Polymerase chain reaction(PCR) products were detected using a flow injection type sensor based on surface plasmon resonance(SPR). Asymmetric PCR was used to amplify the target DNA sequence and two products with different length were produced. The novelty of our DNA detection system was that our target DNA was double stranded but the probe binding site, located in the 3'-terminus, was single stranded. This avoids the formation of intra and intermolecular complexes. This novel design permitted us not only to detect PCR product with high-sensitivity, but also to develop a rapid detection system for the detection of the verotoxin 2 gene of **Escherichia coli O157**:H7. (author abst.)

L24 ANSWER 13 OF 15 JICST-EPlus COPYRIGHT 2002 JST
ACCESSION NUMBER: 990666257 JICST-EPlus
TITLE: Development of DNA sensor for the detection of **Escherichia coli O157.**
AUTHOR: IKEBUKURO KAZUNORI; KAI ERIKO; YANO KAZUYOSHI; **KARUBE ISAO**
CORPORATE SOURCE: Univ. of Tokyo, RCAST Res. Center for Adv. Sci. and Technol.
SOURCE: Denki Gakkai Kagaku Sensa Shisutemu Kenkyukai Shiryo, (1999) vol. CS-99, no. 13-21, pp. 1-5. Journal Code: L2895A (Fig. 2, Tbl. 1)
PUB. COUNTRY: Japan
DOCUMENT TYPE: Conference; Article
LANGUAGE: Japanese
STATUS: New

L24 ANSWER 14 OF 15 CONFSCI COPYRIGHT 2002 CSA
ACCESSION NUMBER: 1998:58558 CONFSCI
DOCUMENT NUMBER: 98-058558
TITLE: Detection of verotoxin2 gene in **Escherichia coli O157**:H7 strain using fluorescence polarization
AUTHOR: Bangce, Ye; Ikebukuro, K.; Sasaki, S.; Iida, T.; Honda, T.; **Karube, I.**
CORPORATE SOURCE: Univ. Tokyo, Japan
SOURCE: Biosensors & Bioelectronics, Institute of BioScience & Technology, Cranfield University, Cranfield, Beds MK43 0AL, United Kingdom; fax: +44 1234 752 401; URL: http://www.elsevier.nl:80/homepage/sah/bios98, Abstracts and full papers available..
Meeting Info.: 982 5025: 5th World Congress on Biosensors (9825025). Berlin (Germany). 3-5 Jun 1998. Institute of BioScience & Technology.
DOCUMENT TYPE: Conference
FILE SEGMENT: DCCP
LANGUAGE: English

L24 ANSWER 15 OF 15 BIOTECHDS COPYRIGHT 2002 DERWENT INFORMATION LTD

ACCESSION NUMBER: 1999-03847 BIOTECHDS
TITLE: Purification of single stranded DNA from asymmetric PCR product using the SMART system; **Escherichia coli** verotoxin-2 gene amplification
AUTHOR: Kai E; Sumikura K; Ikebukuro K; **Karube I**
CORPORATE SOURCE: Univ.Tokyo
LOCATION: Research Center for Advanced Science and Technology, The University of Tokyo, 4-6-1 Komaba, Meguro-ku, Tokyo 153-8904, Japan.
Email: ekai@bio.rcast.u-tokyo.ac.jp
SOURCE: Biotechnol.Tech.; (1998) 12, 12, 935-39
CODEN: BTECE6
ISSN: 0951-208X
DOCUMENT TYPE: Journal
LANGUAGE: English
AB As current biomedical research is focused on biomolecules which are only available in extremely small quantities, highly sensitive micromethods for biomolecule characterization and analysis are required, and ss DNA is indispensable to research into fundamental biotechnology, e.g. sequence determination, hybridization to DNA probes, and recombinant vectors or plasmids. However, it is very difficult to isolate the ss DNA from crude polymerase chain reaction (PCR) products, and it is tedious to synthesize long PCR products in high purity as yield falls dramatically as the desired oligonucleotides are longer. In this study, a method was developed using the SMART system for the purification of ss DNA from a mixture containing ss and ds DNA amplified using asymmetric PCR, for purification of the verotoxin-2 gene from **Escherichia coli O157**:H7. The PCR product was separated into ss and ds DNA using an anion exchange column which took 15 mon. Compared to another method in which biotinylated symmetric PCR products were applied to an immobilized streptavidin column, this method was simple and could purify ss and ds DNA. (14 ref)

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14-6-02

SEQ ID NO: 17.

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RESULT  10
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LOCUS       ECU41241      294 bp    DNA             BCT       14-JAN-1997
DEFINITION  Escherichia coli variant shiga-like toxin II gene, partial cds.
ACCESSION   U41241
VERSION     U41241.1  GI:1777592
KEYWORDS    .
SOURCE      Escherichia coli.
  ORGANISM  Escherichia coli
            Bacteria; Proteobacteria; gamma subdivision; Enterobacteriaceae;
            Escherichia.
REFERENCE   1  (sites)
  AUTHORS   Martin,I.E., Bacon,D.D., Tyler,S.D., Munro,C.K. and Johnson,W.M.
  JOURNAL   J. Clin. Microbiol. (1995) In press
REFERENCE   2  (bases 1 to 294)
  AUTHORS   Martin,I.E.
  TITLE     Direct Submission
  JOURNAL   Submitted (22-NOV-1995) Irene E. Martin, Bureau of Microbiology,
            L.C.D.C., H.P.B. Building, Tunney's Pasture, Ottawa, ONT K1A 0L2,
            Canada
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                     /db_xref="GI:1777593"
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ORIGIN


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  Best Local Similarity   100.0%;  Pred. No. 2.7e+02;
  Matches   15;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

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Db    200 TGCAGAGTGGTATAA 186


RESULT  11
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LOCUS       ECU41240      296 bp    DNA             BCT       14-JAN-1997
DEFINITION  Escherichia coli variant shiga-like toxin II gene, partial cds.
ACCESSION   U41240
VERSION     U41240.1  GI:1777590
KEYWORDS    .
SOURCE      Escherichia coli.
  ORGANISM  Escherichia coli
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            Bacteria; Proteobacteria; gamma subdivision; Enterobacteriaceae;
            Escherichia.
REFERENCE   1  (sites)
  AUTHORS   Martin,I.E., Bacon,D.J., Tyler,S.D., Munro,C.K. and Johnson,W.M.
  JOURNAL   J. Clin. Microbiol. (1995) In press
REFERENCE   2  (bases 1 to 296)
  AUTHORS   Martin,I.E.
  TITLE     Direct Submission
  JOURNAL   Submitted (22-NOV-1995) Irene E. Martin, Bureau of Microbiology,
            L.C.D.C., H.P.B. Building, Tunney's Pasture, Ottawa, ONT K1A 0L2,
            Canada
FEATURES             Location/Qualifiers
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                     /db_xref="GI:1777591"
                     /translation="AVDIRGLDVYQARFDHLRLIIEQNNLYVAGFVNTATNTFYRFSD
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BASE COUNT       74 a     63 c     68 g     91 t
ORIGIN


  Query Match             100.0%;  Score 15;  DB 1;  Length 296;
  Best Local Similarity   100.0%;  Pred. No. 2.7e+02;
  Matches   15;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

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Db     203 TGCAGAGTGGTATAA 189


RESULT  12
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LOCUS       ECU41236      298 bp    DNA             BCT       14-JAN-1997
DEFINITION  Escherichia coli variant shiga-like toxin II gene, partial cds.
ACCESSION   U41236
VERSION     U41236.1  GI:1777582
KEYWORDS    .
SOURCE      Escherichia coli.
  ORGANISM  Escherichia coli
            Bacteria; Proteobacteria; gamma subdivision; Enterobacteriaceae;
            Escherichia.
REFERENCE   1  (sites)
  AUTHORS   Martin,I.E., Bacon,D.J., Tyler,S.D., Munro,C.K. and Johnson,W.M.
  JOURNAL   J. Clin. Microbiol. (1995) In press
REFERENCE   2  (bases 1 to 298)
  AUTHORS   Martin,I.E.
  TITLE     Direct Submission
  JOURNAL   Submitted (22-NOV-1995) Irene E. Martin, Bureau of Microbiology,
            L.C.D.C., H.P.B. Building, Tunney's Pasture, Ottawa, ONT K1A 0L2,
            Canada
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ORIGIN


  Query Match             100.0%;  Score 15;  DB 1;  Length 298;
  Best Local Similarity   100.0%;  Pred. No. 2.7e+02;
  Matches   15;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

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           |||||||||||||||
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RESULT  13
ECU41238/c
LOCUS       ECU41238      298 bp    DNA             BCT       14-JAN-1997
DEFINITION  Escherichia coli variant shiga-like toxin II gene, partial cds.
ACCESSION   U41238
VERSION     U41238.1  GI:1777586
KEYWORDS    .
SOURCE      Escherichia coli.
  ORGANISM  Escherichia coli
            Bacteria; Proteobacteria; gamma subdivision; Enterobacteriaceae;
            Escherichia.
REFERENCE   1  (sites)
  AUTHORS   Martin,I.E., Bacon,D.J., Tyler,S.D., Munro,C.K. and Johnson,W.M.
  JOURNAL   J. Clin. Microbiol. (1995) In press
REFERENCE   2  (bases 1 to 298)
  AUTHORS   Martin,I.E.
  TITLE     Direct Submission
  JOURNAL   Submitted (22-NOV-1995) Irene E. Martin, Bureau of Microbiology,
            L.C.D.C., H.P.B. Building, Tunney's Pasture, Ottawa, ONT K1A 0L2,
            Canada
FEATURES             Location/Qualifiers
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                     /db_xref="GI:1777587"
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BASE COUNT       76 a     64 c     67 g     91 t
ORIGIN


  Query Match             100.0%;  Score 15;  DB 1;  Length 298;
  Best Local Similarity   100.0%;  Pred. No. 2.7e+02;
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Qy       1 tgcagagtggtataa 15
           |||||||||||||||
Db     202 TGCAGAGTGGTATAA 188


RESULT  14
ECU41235/c
LOCUS       ECU41235      299 bp    DNA             BCT       14-JAN-1997
DEFINITION  Escherichia coli variant shiga-like toxin II gene, partial cds.
ACCESSION   U41235
VERSION     U41235.1  GI:1777580
KEYWORDS    .
SOURCE      Escherichia coli.
  ORGANISM  Escherichia coli
            Bacteria; Proteobacteria; gamma subdivision; Enterobacteriaceae;
            Escherichia.
REFERENCE   1  (sites)
  AUTHORS   Martin,I.E., Bacon,D.J., Tyler,S.D., Munro,C.K. and Johnson,W.M.
  JOURNAL   J. Clin. Microbiol. (1995) In press
REFERENCE   2  (bases 1 to 299)
  AUTHORS   Martin,I.E.
  TITLE     Direct Submission
  JOURNAL   Submitted (22-NOV-1995) Irene E. Martin, Bureau of Microbiology,
            L.C.D.C., H.P.B. Building, Tunney's Pasture, Ottawa, ONT K1A 0L2,
            Canada
FEATURES             Location/Qualifiers
     source          1. .299
                     /organism="Escherichia coli"
                     /db_xref="taxon:562"
     CDS             <1. .>299
                     /note="O10"
                     /codon_start=1
                     /transl_table=11
                     /product="variant shiga-like toxin II"
                     /protein_id="AAB40545.1"
                     /db_xref="GI:1777581"
                     /translation="FAVDIRGLDVYQARFDHLRLIIEQNNLYVAGFVNTATNTFYRFS
                     DFAHISVPGVTTVSMTTDSSYTTLQRVAALERSGMQISRHSLVSSYLALMEFSGNA"
BASE COUNT       76 a     62 c     68 g     93 t
ORIGIN


  Query Match             100.0%;  Score 15;  DB 1;  Length 299;
  Best Local Similarity   100.0%;  Pred. No. 2.7e+02;
  Matches   15;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 tgcagagtggtataa 15
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Db     206 TGCAGAGTGGTATAA 192
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RESULT  15
ECU41242/c
LOCUS       ECU41242      307 bp    DNA             BCT       14-JAN-1997
DEFINITION  Escherichia coli variant shiga-like toxin II gene, partial cds.
ACCESSION   U41242
VERSION     U41242.1  GI:1777594
KEYWORDS    .
SOURCE      Escherichia coli.
  ORGANISM  Escherichia coli
            Bacteria; Proteobacteria; gamma subdivision; Enterobacteriaceae;
            Escherichia.
REFERENCE   1  (sites)
  AUTHORS   Martin,I.E., Bacon,D.J., Tyler,S.D., Munro,C.K. and Johnson,W.M.
  JOURNAL   J. Clin. Microbiol. (1995) In press
REFERENCE   2  (bases 1 to 307)
  AUTHORS   Martin,I.E.
  TITLE     Direct Submission
  JOURNAL   Submitted (22-NOV-1995) Irene E. Martin, Bureau of Microbiology,
            L.C.D.C., H.P.B. Building, Tunney's Pasture, Ottawa, ONT K1A 0L2,
            Canada
FEATURES             Location/Qualifiers
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                     /db_xref="taxon:562"
     CDS             <1. .>307
                     /note="O3"
                     /codon_start=3
                     /transl_table=11
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                     /protein_id="AAB40552.1"
                     /db_xref="GI:1777595"
                     /translation="SYFAVDIRGLDVYQARFDHLRLIVEQNNLYVAGFVNTATNTFYR
                     FSDFAHISVPGVTTVSMTTDSSYTTLQRVAALERSGMQISRHSLVSSYLALMEFSGNA
                     "
BASE COUNT       76 a     63 c     72 g     96 t
ORIGIN
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  Query Match             100.0%;  Score 15;  DB 1;  Length 307;
  Best Local Similarity   100.0%;  Pred. No. 2.7e+02;
  Matches   15;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 tgcagagtggtataa 15
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Db     214 TGCAGAGTGGTATAA 200
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